

NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) WFO Jackson, Mississippi
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		REPORT FOR: MONTH YEAR December 2010
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE Alan E. Gerard, Meteorologist In-Charge DATE 01/18/2011

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☒ An X inside this box indicates that no river flooding occurred within this hydrologic service area.

Synopsis...

December was characterized by a variety of weather. Most of the month was dominated by high pressure with below normal temperatures and below normal rainfall. The average temperature for all of Mississippi in December 2010 was 41.8 F. This was -5.3 F cooler than the 1901-2000 (20th century) average, the 8th coolest December in 116 years. Some light snow was reported on Christmas Day over northern portions of the Hydrologic Service Area (HSA), while flurries were reported late Christmas, as well as the day after over central and southern sections of the HSA. The month ended with heavy rainfall and severe weather which included an EF2 tornado touchdown in the Jackson Metro in the afternoon of New Year's Eve and a low end EF3 touchdown in Attala County later in the evening around the midnight hour.

The month began with high pressure in control of the weather. A dry, fast moving cold front pushed through the HSA from late on the 4th into the early morning of the 5th. This front brought a cold dome of high pressure into the region. A fast moving upper level disturbance crossed the HSA on the 8th. Scattered light rainfall and some snow showers occurred over areas West of I-55. High pressure moved into the area behind the disturbance; however, by the afternoon of the 10th, the high pressure center had shifted to the east allowing for a southerly flow ahead of yet another cold front. This cold front moved through the region from the afternoon of the 11th into the early hours of the 12th. Widespread rainfall occurred across the area. Rainfall amounts were generally 1.00 inch or less, with some higher totals up to 2.00 inches in East Central Mississippi. High pressure built into the area behind the front.

Cold, high pressure remained in control of the weather until shifting to the east on the 15th. This allowed a moist, southerly flow to return over the region. Some light showers broke out over Northeast Mississippi as the warm, moist air pushed up and over cooler air at the surface. Another cold front trekked through the region on the 16th into the 17th followed by a fast moving upper level disturbance on the 18th. Rainfall totals from the 15th to the 18th were less than 0.50 inches.

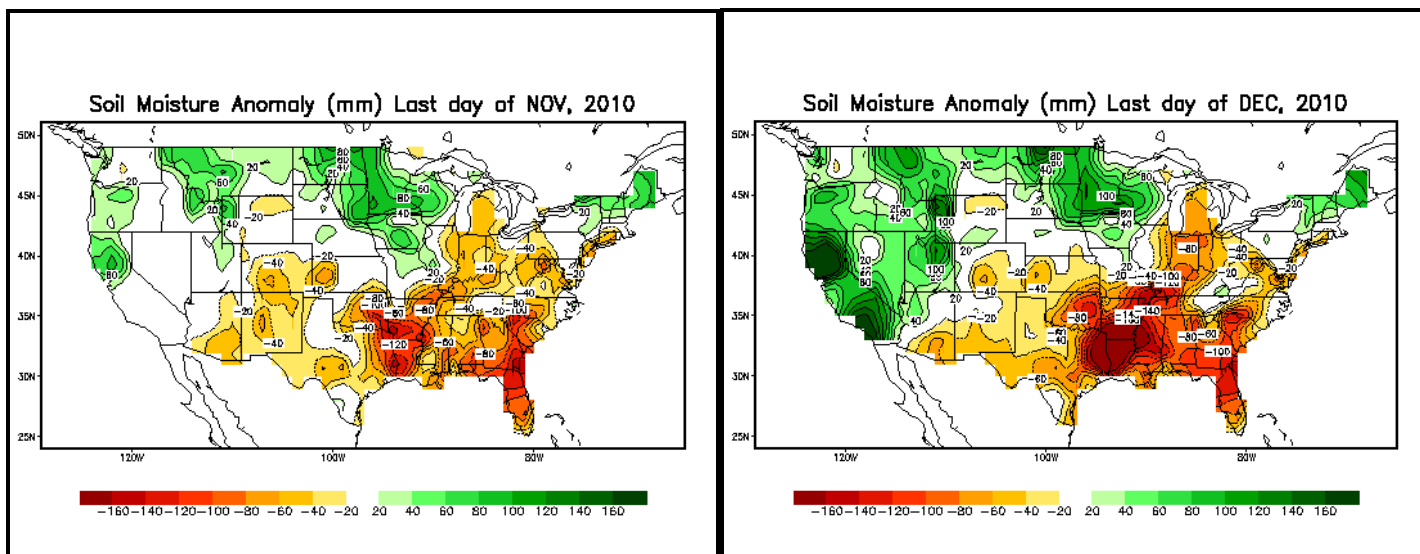
High pressure built into the area on the 19th; however, by the 20th and into the 21st, it had moved east of the HSA allowing a return of southerly flow. Temperatures warmed up nicely during this time period. Another cold front slowly progressed across the HSA from late on the 21st into the 22nd. By the morning of the 23rd, the front was well off the coast. No rainfall was reported with this front. High pressure moved into the region on the 23rd and into the 24th. An upper level trough progressed to the east out of West Texas on the 24th. By Christmas morning, low pressure formed along the Louisiana Coast and began to move to the northeast. Some snow showers occurred across north and northeast portions of the HSA while mainly light rain occurred elsewhere. By the late evening of the 25th and into the morning of the 26th, snow flurries and light snow showers occurred across the area. Total liquid precipitation amounts of 0.25 inches or less were reported across the HSA for the event. Frigid high pressure moved into the region from the 26th to early on the 28th. Temperatures were in the 30s and low 40s during the day and in the teens and 20s at night.

From late on the 28th into the early hours of the 29th, high pressure began shifting eastward allowing an abundance of warm, moist air to return to the HSA. An upper level disturbance, ahead of a deepening storm system in the Southwest U.S., moved across the area on the 29th and 30th. Rainfall of 0.50 inches or less occurred north of Interstate 20 while 0.50 to 2.50 inches occurred south of Interstate 20. A cold front associated with the main storm system moved into the HSA on the 31st bringing heavy rainfall and severe weather. Tornadoes were reported in the afternoon hours across Warren, southern Hinds, and eastern Rankin Counties. Heavy rainfall from 1.50 to 5.00 inches broke out across North Central Mississippi including the Big Black River Basin. Rainfall from 1.50 to 3.50 inches fell across Central Mississippi including the Jackson Metropolitan Area. An EF3 tornado touched down around midnight in Attala County. The front with its severe weather threat did not clear the HSA until well into the New Year.

River and Soil Conditions...

Northeast Louisiana, Southeast Arkansas, and portions of Southeast and Northwest Mississippi within the Jackson HSA were the driest locations during the month of December. Rainfall amounts were between 10 and 50 percent of normal. From Southwest Mississippi to Northeast Mississippi, rainfall ranged from 50 percent of normal to near normal rainfall. For all of 2010, Northeast Louisiana, Southeast Arkansas, and portions of the Mississippi Lower Yazoo Delta were the driest where rainfall ranged from 25 to 75 percent of normal. The remainder of the HSA ranged from 50 percent of normal to a few locations where rainfall was near normal.

Soil moisture deficits increased by 1.50 inches across the entire HSA. Soil moisture deficits of 4.50 to 6.50 inches were common across Northeast Louisiana, Southeast Arkansas, and western portions of Mississippi. Soil moisture deficiencies significantly increased over the remainder of Mississippi where deficits ranged from 2.00 to 3.00 inches.

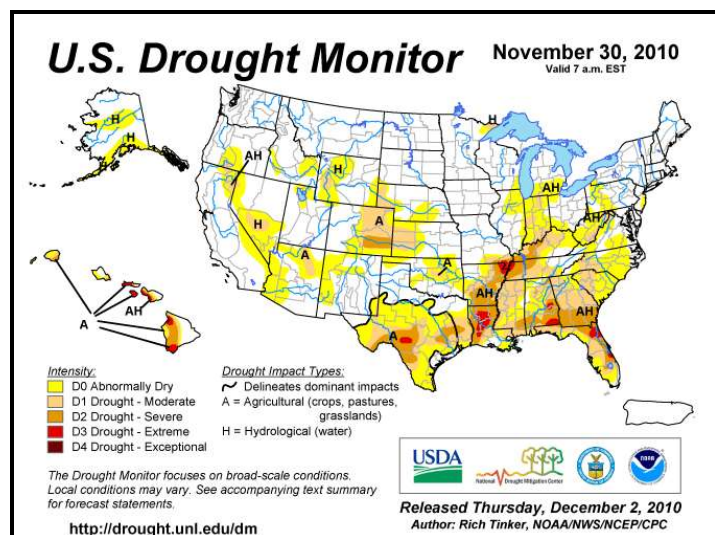


Last day of November, 2010

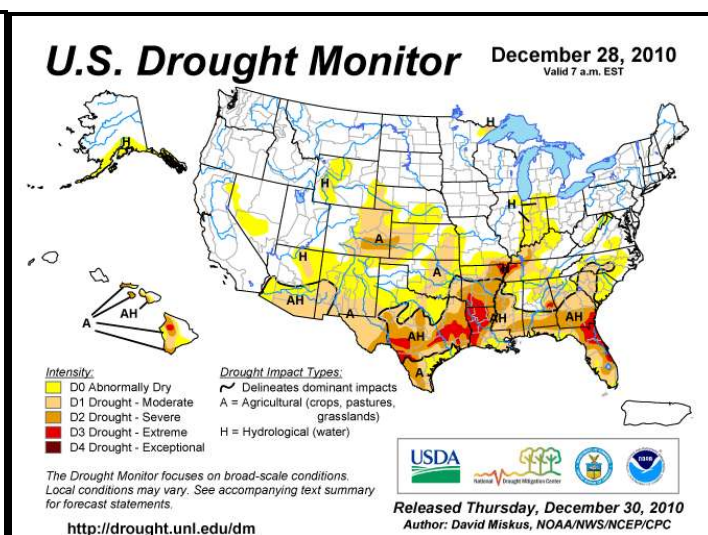
Last day of December 2010

Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

A comparison of the November 30th U.S. Drought Monitor to the December 28th U.S. Drought Monitor showed drought conditions once again worsening over much of Mississippi. Extreme Drought (D3) remained along the western edges of Northeast Louisiana Parishes along the Ouachita River. Severe Drought (D2) remained over Southeast Arkansas and the remainder of Northeast Louisiana. Severe Drought (D2) once again wedged into the Mississippi Lower Yazoo Delta Region and extreme Southeast Mississippi. Moderate Drought (D1) covered the remainder of Mississippi except for abnormally dry conditions (D0) over a small portion of Northeast Mississippi.

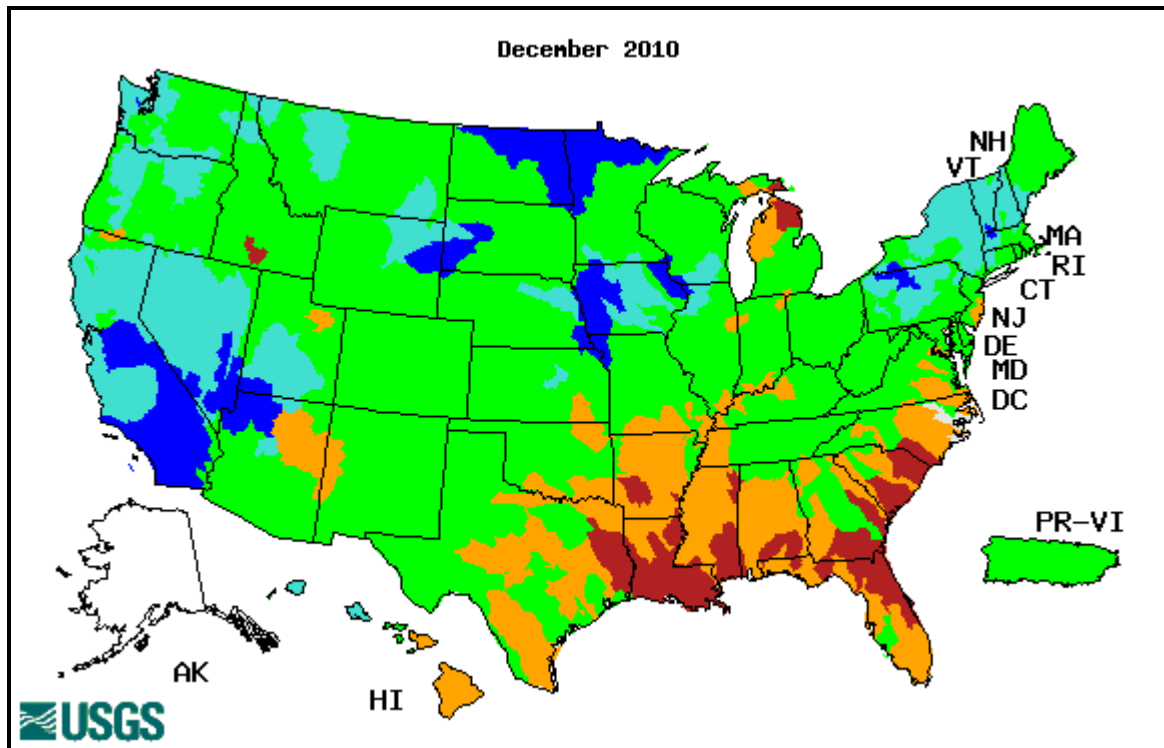


November 30, 2010



December 28th, 2010

The United States Geological Survey's (USGS) December 2010 river streamflow records were compared with all historical December streamflow records. Stream flows ranged from below normal to much below normal over the entire HSA.



Explanation - Percentile classes						
●	●	●	●	●	●	●
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High

No river flooding was reported during the month. After a minor rise around the first of the month, most rivers receded for the remainder of the month.

A minor rise in river stage occurred on the Mississippi River during the first half of the month. For the remainder of the month, the river receded.

Based on current soil moisture conditions, current streamflow conditions, and an expected below normal rainfall pattern across much of the HSA over the next 60 to 90 days:

<i>Pearl River System:</i>	Below Normal.
<i>Yazoo River System:</i>	Below Normal.
<i>Big Black River System:</i>	Below Normal.
<i>Homochitto River System:</i>	Below Normal.
<i>Pascagoula River System:</i>	Below Normal.
<i>Northeast LA and Southeast AR:</i>	Below Normal.
<i>Tombigbee River System:</i>	Below Normal.
<i>Mississippi River:</i>	Normal.

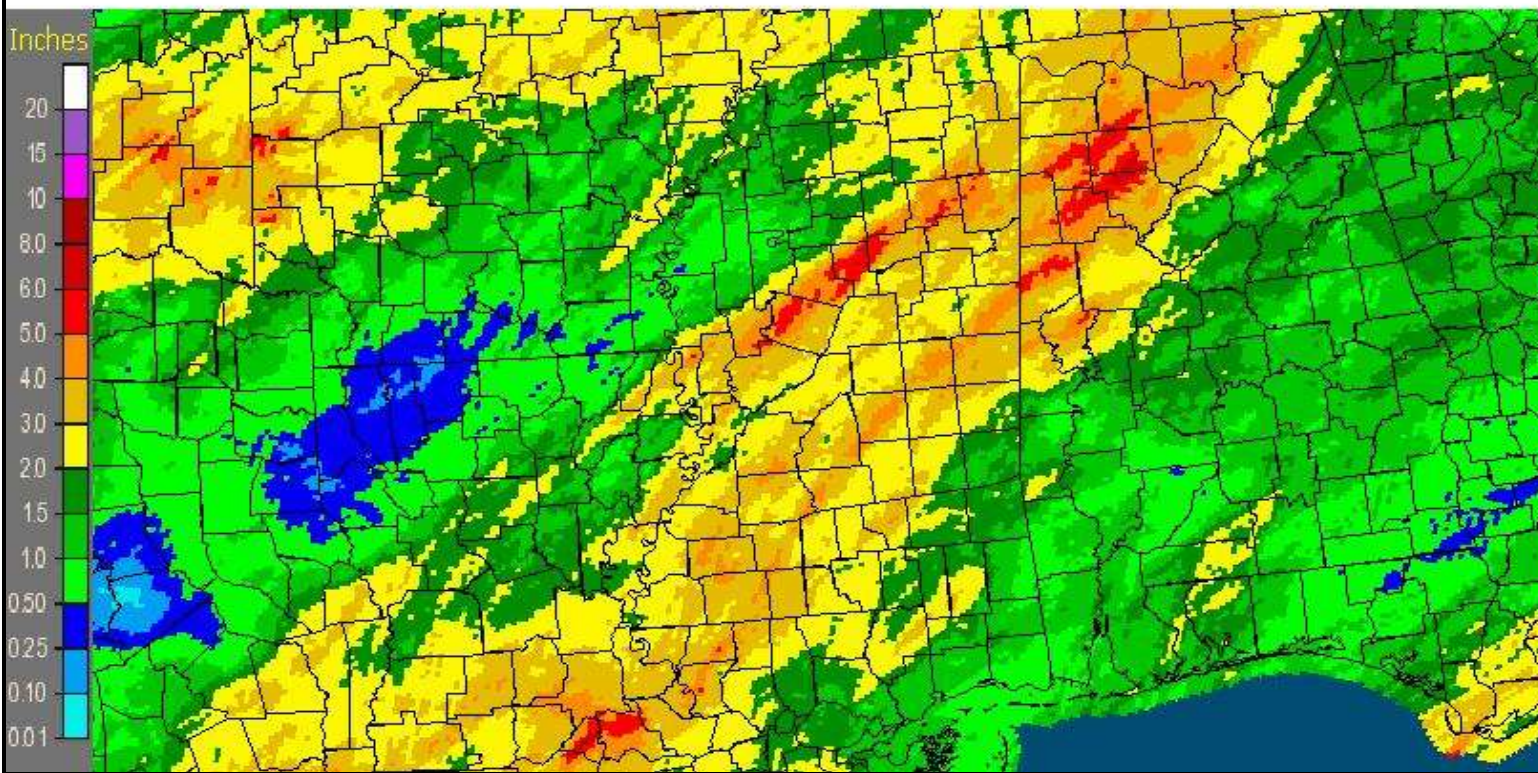
Rainfall for the month of December

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on November 30th until 7 am on December 31st were: 2.56 inches at Natchez, MS; 2.55 inches at Union Church, MS; 2.47 inches at Larto Lake, LA; 2.37 inches at Brookhaven, MS; 2.31 inches at Hazlehurst, MS; 2.14 Red River L/D #1; and 2.05 inches at Prentiss, MS.

The lowest rainfall totals in the HSA were: 0.26 inches at Lake Providence, LA; 0.34 inches at Oakridge, LA; 0.44 inches at Pioneer and Rayville, LA; 0.49 inches at Winnsboro 5SSE, LA; 0.53 inches at Vicksburg, MS; 0.57 inches at Oak Grove, LA; and 0.64 inches at Bastrop, LA.

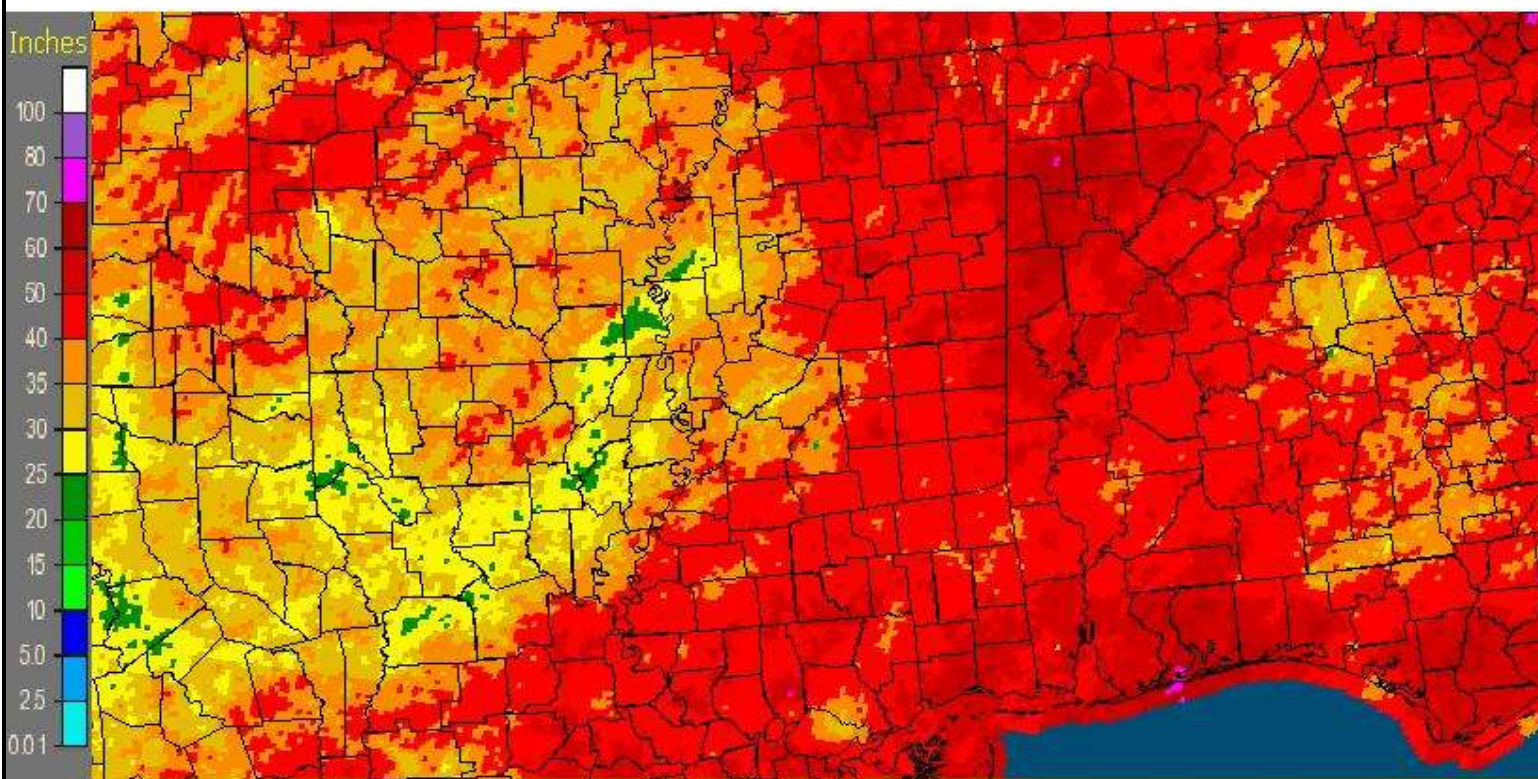
Note: The rainfall graphic below contain the heavy rainfall that occurred after 7am on the 31st of December. Thus, rainfall totals are higher than the coop stations above.

Mississippi: December, 2010 Monthly Observed Precipitation
Valid at 1/1/2011 1200 UTC- Created 1/3/11 21:41 UTC



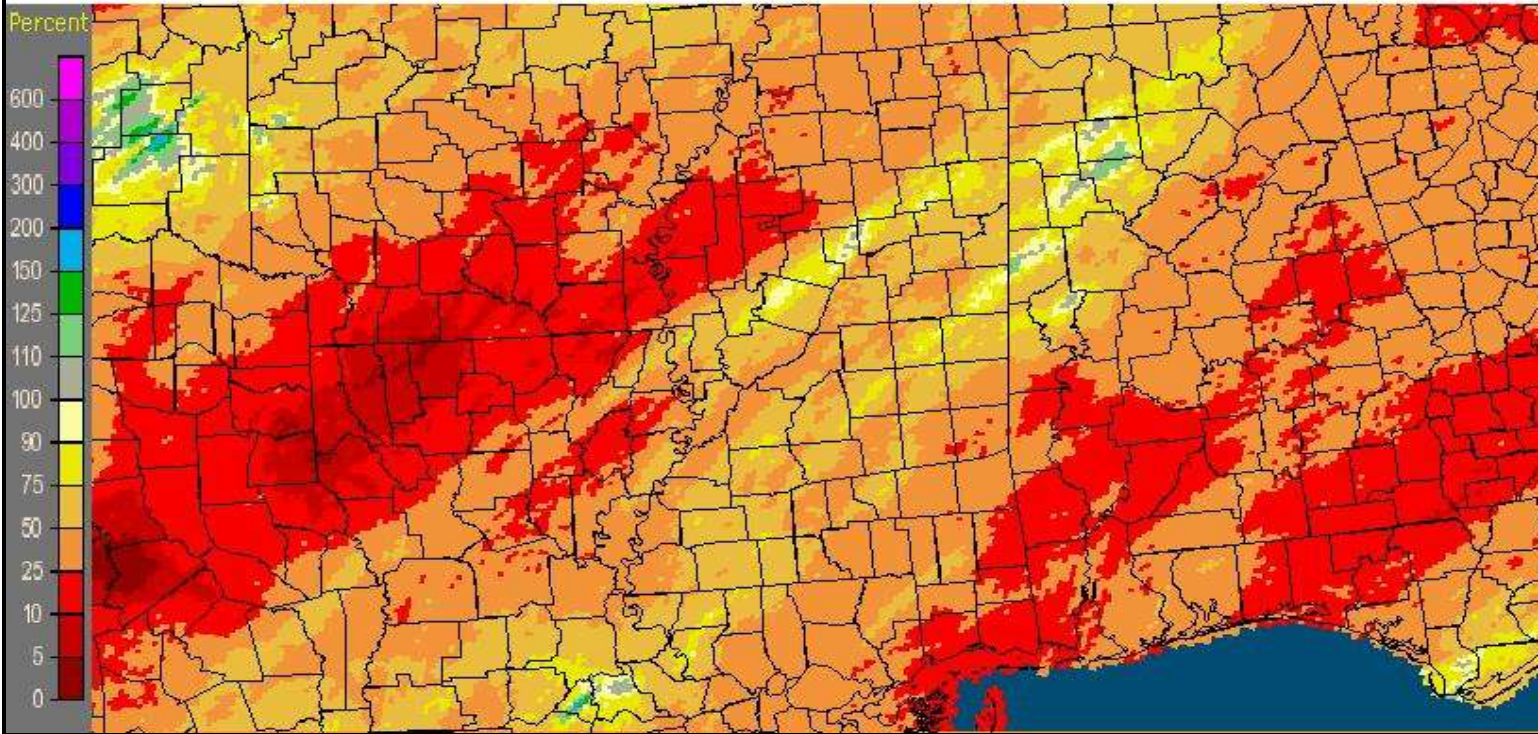
December 2010 Rainfall Estimates

Mississippi: Full Year 2010 Observed Precipitation
Valid at 1/1/2011 1200 UTC- Created 1/3/11 21:47 UTC



Calendar Year 2010 Rainfall Estimates

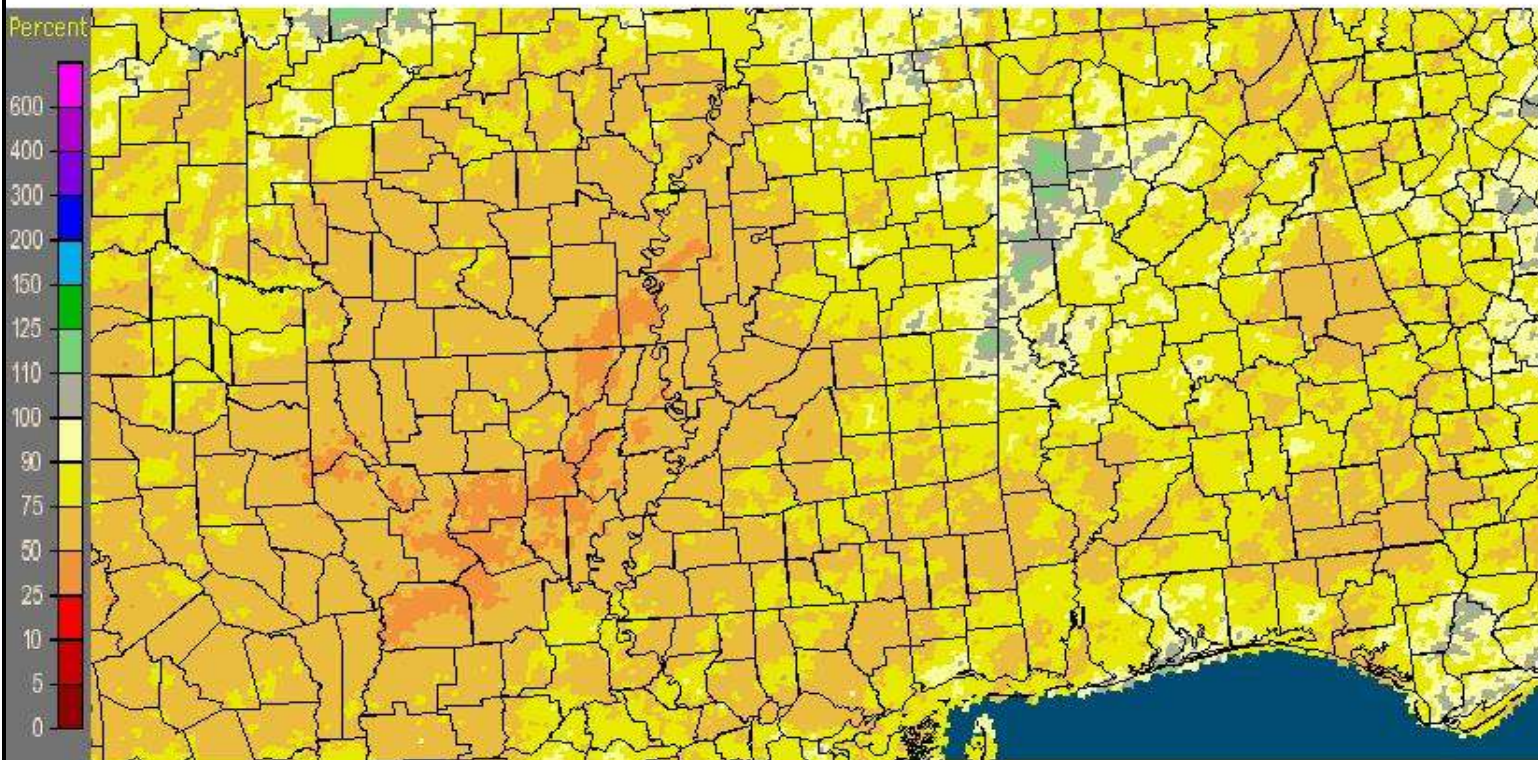
Mississippi: December, 2010 Monthly Percent of Normal Precipitation
Valid at 1/1/2011 1200 UTC- Created 1/3/11 21:45 UTC



December 2010 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

Mississippi: Full Year 2010 Percent of Normal Precipitation
Valid at 1/1/2011 1200 UTC- Created 1/3/11 21:51 UTC



Calendar Year 2010 Percent of Normal Rainfall Estimates

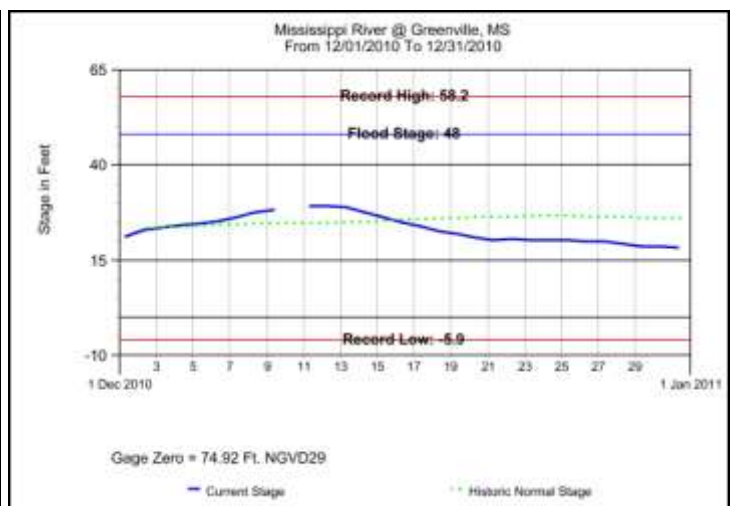
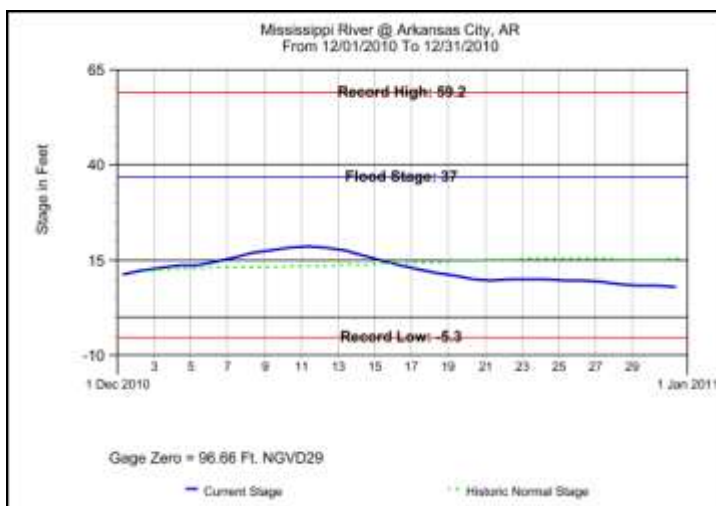
December rainfall for Selected Cities...

City (Airport)	December Rainfall	Departure from normal	2010 Rainfall	2010 Departure from Normal
Jackson, MS	3.88	-1.46	47.22	-8.73
Meridian, MS	1.11	-4.20	41.56	-17.09
Greenwood, MS	2.67	-2.74	35.84	-18.61
Greenville, MS	1.28	-3.97	29.40	-24.80
Hattiesburg, MS	1.32	-3.93	40.52	-21.88
Vicksburg, MS	2.74	-3.30	35.05	-23.63

Mississippi River...

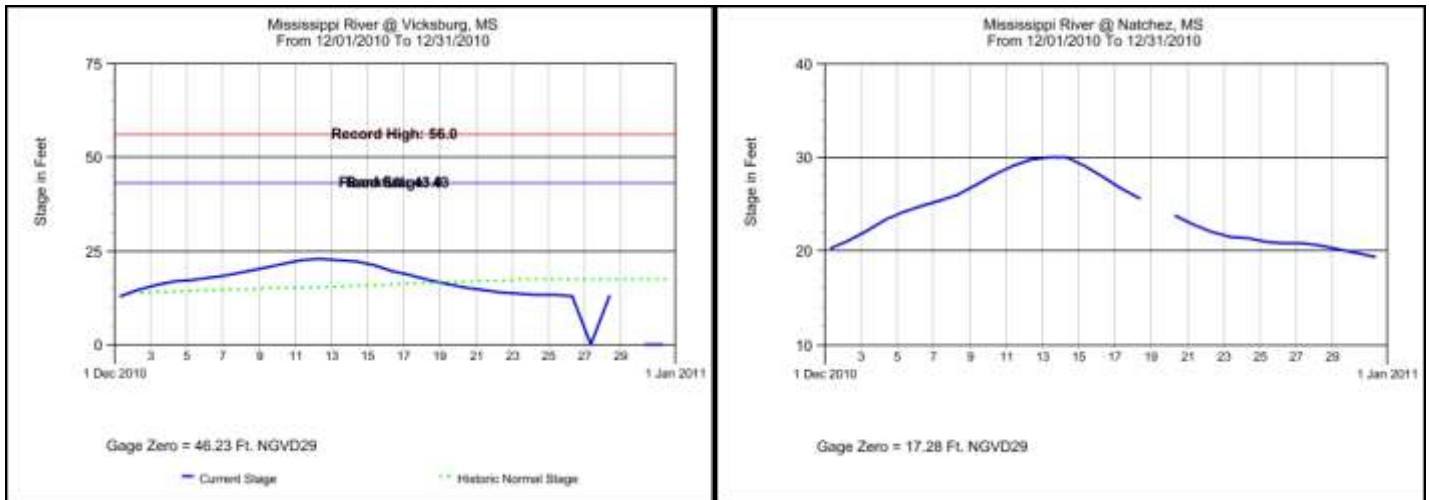
Mississippi River Plots for December, 2010

Plots Courtesy of the United States Army Corps of Engineers



ARKANSAS CITY, MS

GREENVILLE, MS



VICKSBURG, MS bad data 27,30,31

NATCHEZ, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	10.69	11/30/10	5.42	11/10/10
Greenville, MS	48	20.77	11/30/10	15.31	11/11/10
Vicksburg, MS	43	12.93	11/30/10	8.61	11/12/10
Natchez, MS	48	20.18	11/30/10	16.14	11/13/10

Total Flood Warning products issued: 0
 Total Flood Statement products issued: 0
 Total Flood Advisories MS River : 0
 Daily Rainfall Products (RRA'S) issued: 31
 Daily River Forecast Products (RVS'S) issued: 31
 Daily River Stage products (RVA'S) issued: 31

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Service Hydrologist

&

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Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District